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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,115	01/26/2001	Arthur Edward Shropshire	51005.P209	7005

22907 7590 06/21/2004

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WASHINGTON, DC 20001

EXAMINER

FERRIS III, FRED O

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/771,115

Applicant(s)

SHROPSHIRE, ARTHUR
EDWARD

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-25 have been presented for examination based on applicant's disclosure filed on 26 January 2001. Claims 1-25 have been rejected by the examiner.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the assignment of elements and the permissible relationship to the various modules as claimed by the limitations of independent claims 1, 17, and 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of

any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. *The attempt to incorporated essential material in the specification by reference to a foreign application or patent, or **to a publication** is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See In re Hawkins, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); In re Hawkins, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and In re Hawkins, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).*

Specifically, page 11, line 23 of applicant's specification references the following document that appears to contain matter which is critical to operation of the claimed invention and for providing support for the claimed limitations. This document is:

- *"CAPITOL H" (User's Manual implied) Mentor Graphics Incorporated*

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. *Claims 1-25 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not adequately described. Matter critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See In re Mayhew, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).*

*Specifically, independent claims 1, 17, and 19 include limitations relating to the **assignment of elements** and the **permissible relationship** to the various **modules** that is not sufficiently described in the specification. While the specification makes reference, for example, to "automatically" assigning a module code and selecting required modules (page 14, line 10, page 16, lines 11-12, 21), and "automatically" analyzing and validating the design and "automatically" creating module data (page 6, lines 10, 18), there is no actual description of how the **assignment of elements** is accomplished, what the **permissible relationships** are, or how they relate to the various **modules** sufficient to allow one skilled in the art to make and/or use the invention. No techniques or algorithms are disclosed for actually accomplishing the assignment process or determining the relationship between modules. Dependent claims inherit this defect.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent 6,457,165 issued to Ishikawa et al.

Independent claims 1, 17, and 19 are drawn to:

Creating/storing data for wiring harness design with module data representing wire and component element requirements to create a harness where:

- *elements are assigned to modules*
- *elements are available to multiple modules*
- *elements available to multiple modules assigned to one group of modules but available to all modules*
- *permissible relationships (allowable connections) between modules stored*
- *module validation check for permissible relationships*
- *element requirements automatically calculated and combined*
- *harness includes a core module*

Per independent claims 1, 17, and 19: Ishikawa discloses the elements of the claimed limitations of the present invention as follows:

- *Creating/storing data for wiring harness design with module data representing wire and component element requirements to create a harness: Ishikawa discloses a wiring harness design systems which creates and stores design data of all relative harness elements (Fig. 4). For example, column 2, line 35 of Ishikawa recites;*

"a wiring harness arrangement designing apparatus comprising: route information inputting means for inputting route information including route drawing Information on routes of a plurality of wiring harnesses to be arranged within a vehicle and route length information of each wiring harness; wiring information memory means for storing wiring information including auxiliary unit information on a plurality of auxiliary units connected to the plurality of wiring harnesses and wire information on attributes of a plurality of wires connected between the plurality of auxiliary units; display means for displaying on a screen a route drawing based on the route information input by the route information inputting means; position assigning means for assigning positions of the plurality of auxiliary units on the route drawing displayed on the screen based on the auxiliary unit information included in the wiring information stored by the wiring information memory means; and route/wiring linking means for mutually wire-connecting the plurality of auxiliary units of which positions have been assigned by the position assigning means through a selective route on the route drawing, and for linking the wiring information on the plurality of wire-connected auxiliary units to the route information on the selected route"

- *elements are assigned to modules: Ishikawa discloses assigning and storing data relating to elements (wires, components, connector, etc.) of a modular harness (i.e. attributes of a harness module). (Abstract, Summary of Invention, CL6-L37-54, Figs. 4-7, 11-20)*
- *elements are available to multiple modules: Ishikawa discloses elements available to multiple (a plurality of) harness modules. (Abstract, Summary of Invention, CL6-L37-54, CL7-L26-41, CL8-L56-65, Figs. 4-7, 11-20)*
- *elements available to multiple modules assigned to one group of modules but available to all modules: Ishikawa discloses multiple groups of both harness modules and auxiliary units (option modules) assignable to one group or another plurality of harnesses (i.e. virtual harnesses). (Abstract, Summary of Invention, CL6-L37-54, CL7-L26-41, CL8-L56-65, Figs. 4-7, 11-20)*
- *permissible relationships (allowable connections) between modules stored: Ishikawa discloses a list of permissible (allowable connections) between elements of the harness (Abstract, Summary of Invention, CL6-L37-54, CL7-L26-41, CL8-L56-65, Figs. 4-7, 11-20)*
- *module validation check for permissible relationships: Ishikawa discloses verification of harness wires against an existing (stored) specification. (CL13-L16-29, Figs. 19-20)*
- *element requirements automatically calculated and combined: Ishikawa discloses (automatically) calculating and combining element requirements. (CL12-L7-28, CL13-L16-29, Figs. 4, 15, 19-20)*

- *harness includes a core module: The examiner equates the core harness and option modules of the present invention to be functionally equivalent to the stored harness and auxiliary unit relationship as disclosed by Ishikawa. See: CL6-L28-33, 45-54, 67, CL7-L25-41, Figs. 8, 11-13, for example.*

Regarding dependent claims 2-16, 18, 20-25: Dependent claims include limitations relating to virtual/physical harness modules, the data relationship between harness modules, and automatic assignment/verification of attributes all of which have been disclosed in the prior art as previously cited above. (Abstract, Summary of Invention, CL6-L37-54, CL7-L26-41, CL8-L56-65, CL12-L7-28, CL13-L16-29, Figs. 4-7, 15, 11-20)

While the specification for the claimed invention is delinquent in the areas cited under 112(1) rejections, the examiner has made prior art rejections based on the limited scope of information contained in the specification and a good faith interpretation of the language of the claims.

6. **Claims 1-25 are further rejected under 35 U.S.C. 102(b) as being clearly anticipated by "Wiring Harness Design can a Computer Help?" R. Billsdon, Computing and Control Engineering Journal, IEEE, August 1998.**

Regarding claims 1-25: Billsdon discloses the Raychem Corporation's **HarnWare computer-aided wiring harness design system**. Harnware contains a **library of intelligent harness drawing shapes** (i.e. core harnesses) and **catalogues wiring harness products**.

Once the designer has made decisions about **wire size, routing, connector selection, shielding requirements and operating environment**, Harnware will use this information to (automatically) **select the right sized components** to protect the harness and its environment. Shapes representing harnessing products are **dragged and dropped** into the **drawing, automatically snapping and gluing together**. **Dimensions and connector references** (elements/attributes) are entered by **clicking a shape and typing** in the relevant information. The system **automatically traces on screen the route of each wire** in the **point-to-point wire list through the harness geometry, calculates wire lengths**, determines the **best positioning** of mixed-diameter wires in each harness leg and outputs bundle diameters. (i.e. optimum routing) In about an hour a complex harness design can be finalized and documented, including a **drawing** (see figure 2), **bill of materials, labor estimate and wire list**. Harnware can generate harness documentation in several languages. (Pages 166-167, Figs. 1-5)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,506,950 issued to Hughes et al discloses wiring harness design.

U.S. Patent 5,038,294 issued to Arakawa et al discloses wiring harness design.

U.S. Patent 6,438,435 issued to Wada et al discloses wiring harness design and modular harness data storage/retrieval.

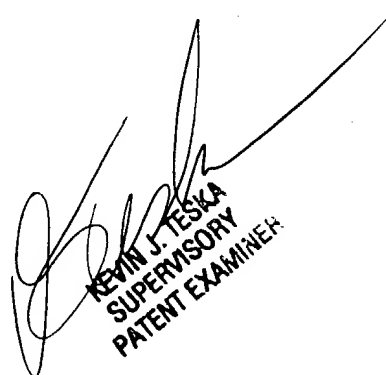
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

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